

# ABSTRACT

## Determination of waveguide parameters

5 A method of determining at least one parameter of a waveguide (3) from wavefield data acquired from wave propagation in the waveguide comprises obtaining first and second dispersion curves (9a, 9b, 9c) in the frequency domain from the wavefield data. A frequency interval between the first dispersion curve and the second dispersion curve is found, and this is used in the determination of at least one parameter of the waveguide.

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The frequency separation  $\Delta f(V)$  between the first and second dispersion curves may be found at a particular value of the phase velocity  $V$ , and the thickness  $h$  of the waveguide can be found using:

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$$\Delta f(V) = \frac{c_1}{2h\sqrt{1 - \frac{c_1^2}{V^2}}}$$

Here,  $c_1$  is the velocity of wave propagation in the waveguide. This may be found from the asymptotic velocity values of the dispersion curves.

20 [Figs 2,3(c)]